

## THE FEMALE OF *DEUDORIX CLEORA* MILLER & MILLER, 1986 (LEPIDOPTERA: LYCAENIDAE)

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### Abstract

The hitherto unknown female of *Deudorix cleora* Miller & Miller, endemic to Sulawesi, Indonesia, is described and figured. New records for the species from central and southern Sulawesi are presented and the male is illustrated in colour for the first time.

### Introduction

*Deudorix* Hewitson, 1863 is a large genus belonging to the tribe Deudorigini, with representatives in the Afrotropical, Oriental and Australian regions. A number of new species have been described in recent years from the latter region, including the south-west Pacific (Tennent 2000, Yagashita 2006, Tennent 2008, Tennent *et al.* 2010).

*Deudorix cleora* Miller & Miller, 1986, arguably one of the most striking members of the genus, was previously known only from the holotype male, collected by Robert G. and Cleora M. Wind in June, 1940. It was among material presented to the Allyn Museum of Entomology (now incorporated into the McGuire Centre, Florida State Museum) by the couple following their trip to the Indonesian Archipelago in 1939-40 and is held in that institution (Miller and Miller 1986). Robert requested that the new butterfly be named after his wife, a request that was honoured after both had died. A female of *D. cleora*, in the private collection of Akira Yagashita (AYC), Ibaraki, Japan, appears to be the only one known and is described here.

Vein description follows that of the numerical notation of Corbet and Pendlebury (1993).

### New records

*Deudorix cleora* was previously only known from the type locality at Lake Dano, near Tondana, north Sulawesi. Additional new records include one male from Palopo, central Sulawesi, taken by a local collector (in Chris J. Müller reference collection) as well as the female described here from the same locality. There are also a few males of *D. cleora* in the reference collections of the author (CJMC) and that of Ken Thorne (KTC), Canada, from southern Sulawesi, implying that the species has a relatively wide distribution in mainland Sulawesi.

Although no colour illustration of *D. cleora* appears to have ever been published, one of the latter male specimens appears on the Wikispecies url ([species.wikimedia.org/wiki/Deudorix\\_cleora](https://species.wikimedia.org/wiki/Deudorix_cleora)).

***Deudorix cleora* Miller & Miller**

(Figs 1-4)

*Material examined.* INDONESIA (SULAWESI): 1 ♂, Palopo, central Sulawesi, Feb. 2009 (in CJMC); 1 ♀, Palopo, central Sulawesi, Aug. 2007 (in AYC). 6 ♂♂, Maaki, southern Sulawesi, 1995 (in KTC); 1 ♂, Maaki, southern Sulawesi, 1995 (in CJMC).

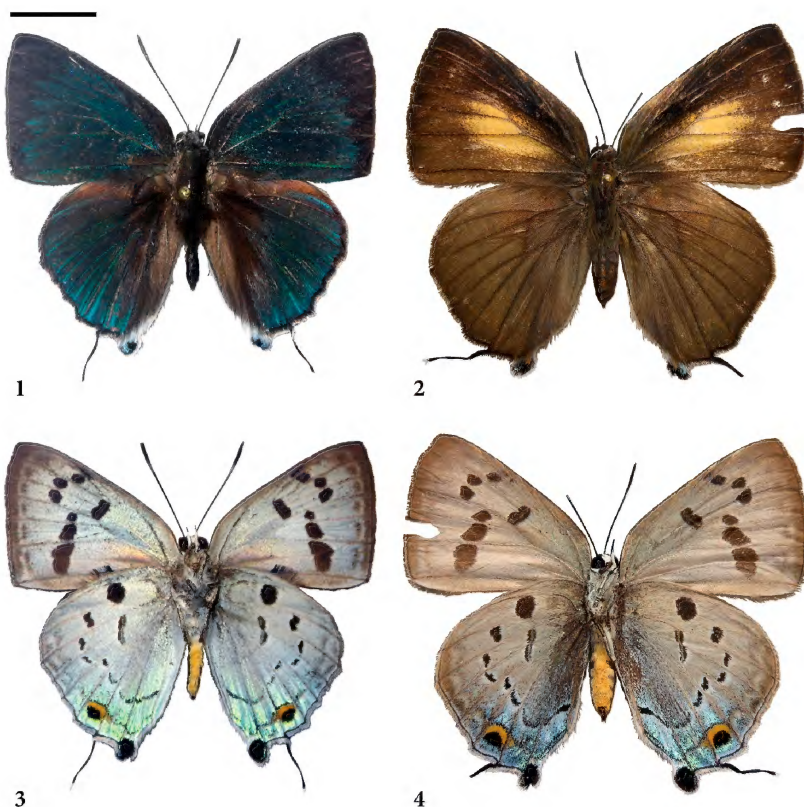
*Description of female* (Figs 3-4). Measurements: forewing length 25 mm; antenna length 12 mm. Head dark brown, frons white; labial palpus white, eye ringed narrowly with white; antennae black, ringed weakly with grey and tipped with orange-brown. Thorax dark brown above, beneath grey-brown. Abdomen dark brown-black above, pale yellow-brown beneath.

Forewing with costa bowed near base, termen convex, inner margin nearly straight; upperside medium brown, broadly darker brown along costa and termen; a pale yellow-brown median patch extending from sub-basal to postmedian area and occupying part of spaces 1b, 2 and 3 and narrowly into the cell and space 4; cilia medium brown; underside background colour medium grey-brown, apex and termen darker brown; a faint narrow submarginal brown band; a subapical band of four sub-rounded dark brown spots between 1 and 2 mm in diameter, one each in spaces 4, 5, 6 and 9; a postmedian band of three sub-rounded dark brown spots between 1 and 3 mm in diameter, one each in spaces 1b, 2 and 3; a sub-rounded dark brown spot approximately 2 mm in diameter at end of cell and discocellulars; cilia medium brown.

Hind wing with thread-like tail (9 mm long) at vein 2; termen slightly produced at vein 3; a prominent lobe adjacent to vein 1b; upperside medium brown, veins dark brown; tail black, tipped with cream-brown; lobe light blue, brown basally and with broad black border; cilia medium brown; underside background colour medium grey-brown; termen darker brown; a faint narrow submarginal brown band; a large subtornal black spot between veins 2 and 3, rimmed with light orange and black crescents basally; entire ground colour in tornal area washed with iridescent blue-green; a postmedian band of elongated brown-black spots extending from inner margin to vein 7, roughly parallel to inner margin and termen, a large dark brown median spot in space 7; tail black, tipped with cream-brown; lobe black, dusted with light blue at margins; cilia light brown at apex and inner margin, light grey-white in tornal area.

**Discussion**

*Deudorix cleora* is a large, highly distinctive taxon that shows some relationship to the Sundaic *D. hypargyria* Elwes [1893] and Philippine *D. philippensis* Schröder, Treadaway & Hayashi, 1981. However, the males of both the latter species are predominantly orange and brown above and both sexes are comparatively unmarked on the undersides.



**Figs 1-4.** *Deudorix cleora* adults: (1) male upperside; (2) female upperside; (3) male underside; (4) female underside. Scale bar = 10 mm.

As with most members of the tribe Deudorini, males and females of *D. cleora* differ markedly on their uppersides, while the undersides are similar. However, the underside ground colour of the female is much darker than that of the male, being grey-brown rather than the grey-white of the male. The tornal spot is larger in the female and the tornal iridescence is a deeper blue-green, rather than the light turquoise colouration of the male. The female upperside of *D. cleora* resembles closely that of the orange female form of *Rapala ribbei* Röber, 1886, another lycaenid endemic to Sulawesi, being comparable in size and upperside pattern and colouration.

Butterfly endemism in Sulawesi is pronounced, being approximately 40% at the species level (Vane-Wright and de Jong 2003). Reconstructed phylogenies of several Indo-Pacific butterfly genera demonstrate that certain

endemic Sulawesi taxa represent ancient, early diversifying lineages (Vane-Wright & de Jong 2003, Müller *et al.* 2010, Müller and Beheregaray 2010, Müller *et al.* 2013). Based on the distinctive characters of *D. cleora*, it is possible that this taxon has also been long isolated on Sulawesi and may well belong to a primitive lineage within the genus.

### Acknowledgements

Akira Yagashita, Ibaraki, Japan, kindly allowed the author to work on the female described in this paper. Alan Cassidy, Berkshire, England, located additional male specimens of *D. cleora*. Ken Thorne, Canada, generously provided additional *D. cleora* male material to the author.

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